

ABSTRACT OF THE DISCLOSURE

A microarray comprising a substrate with a diazotized surface, and at least one biomolecule covalently bound to the diazotized surface is provided. There is also provided a siloxy, a thiolate, and a polymeric diazotized surface. A method for forming a microarray is provided comprising treating an oxidized surface with a siloxy amine to form a siloxy amine treated surface, treating the siloxy amine surface with a diazotizing agent to form a siloxy diazotized surface, and contacting the siloxy diazotized surface with at least one biomolecule to form a microarray in which at least one biomolecule is covalently bound to the siloxy diazotized surface. Also, a method for forming a microarray is provided comprising treating a noble metal surface with a thiol amine to form a thiolate amine treated surface, treating the thiolate amine surface with a diazotizing agent to form a thiolate diazotized surface, and contacting the thiolate diazotized surface with at least one biomolecule to form a microarray in which at least one biomolecule is covalently bound to the thiolate diazotized surface. In addition, there is provided a method for forming a siloxy diazotized surface comprising treating an oxidized surface with a siloxy amine to form a siloxy amine treated surface; and treating the siloxy amine treated surface with a diazotizing agent to form a siloxy diazotized surface. There is also provided a method for forming a thiolate diazotized surface comprising treating a noble metal surface with a thiol amine to form a thiolate amine treated surface; and treating the thiolate amine treated surface with a diazotizing agent to form a thiolate diazotized surface. Finally, there is provided a method for using a microarray comprising the steps of contacting the microarray with a plurality of first free biomolecules to hybridize at least a portion of the plurality of first free biomolecules to bound biomolecules of the microarray; and removing the first free biomolecules from the microarray without removing the bound biomolecules from the microarray.